

(Model.)

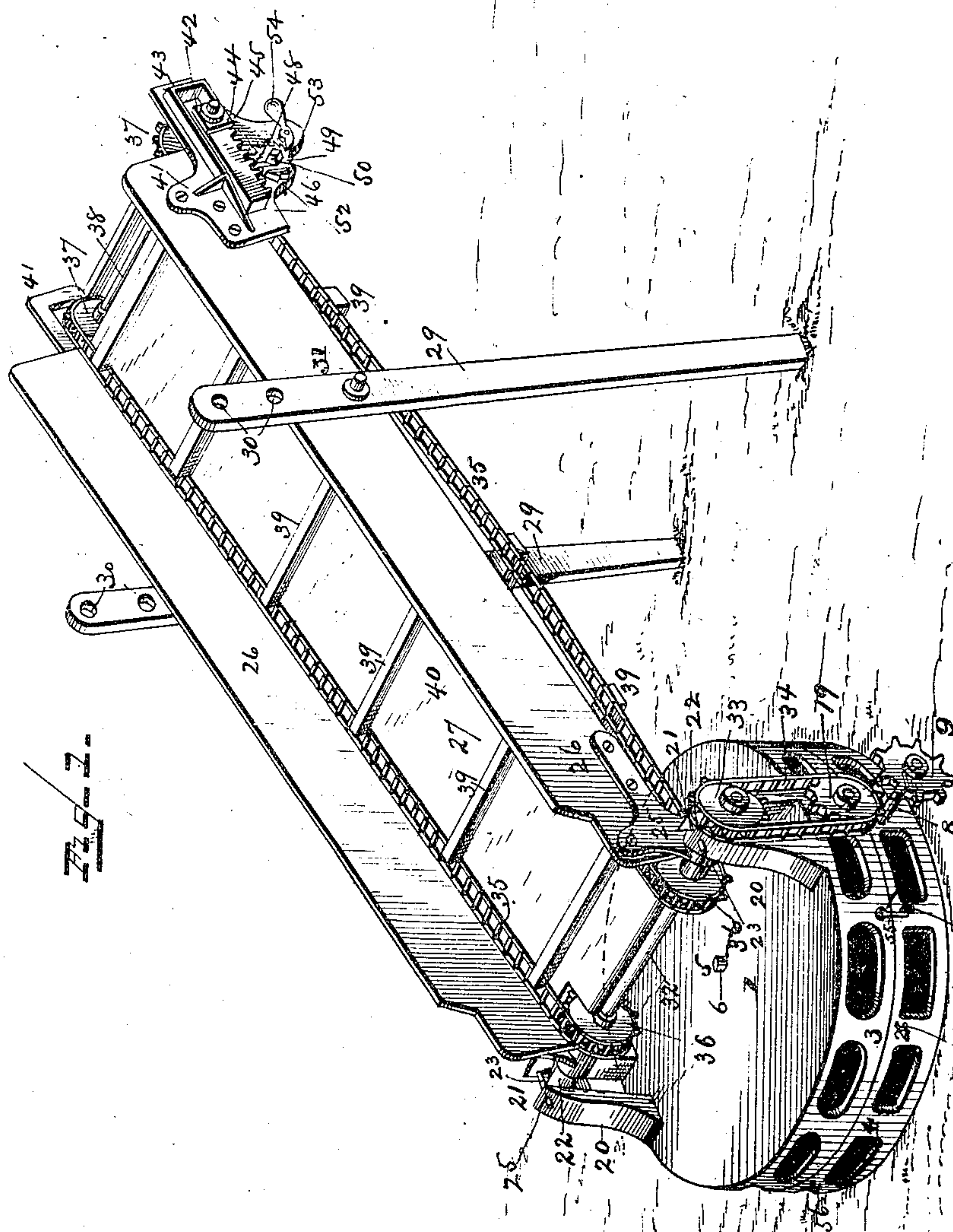
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W. R. HARRISON.

CARRIER FOR FODDER CUTTERS AND THRASHING MACHINES.

No. 389,467.

Patented Sept. 11, 1888.



WITNESSES

W. B. Dargatzis
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INVENTOR

William R. Harrison
By Johnson & Johnson
His Attorneys.

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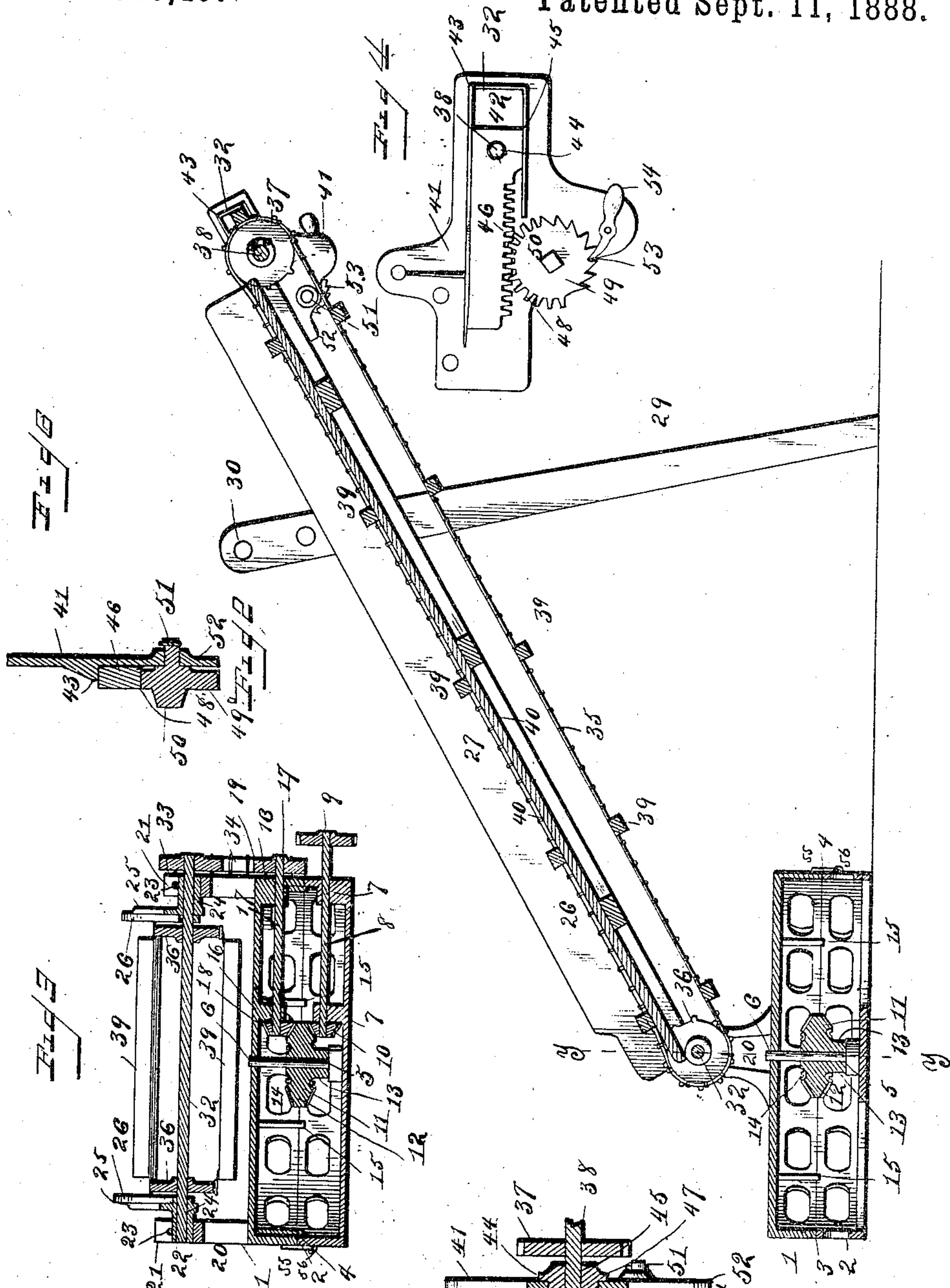
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INVENTOR

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UNITED STATES PATENT OFFICE.

WILLIAMSON R. HARRISON, OF CANTON, OHIO.

CARRIER FOR FODDER-CUTTERS AND THRASHING-MACHINES.

.SPECIFICATION forming part of Letters Patent No. 389,467, dated September 11, 1888.

Application filed January 17, 1888. Serial No. 260,969. (Model.)

To all whom it may concern:

Be it known that I, WILLIAMSON RIDDLE HARRISON, a citizen of the United States, residing at Canton, in Stark county, in the State of Ohio, have invented new and useful Improvements in Carriers for Fodder-Cutters and Thrashing-Machines, of which the following is a specification.

This invention relates to carriers for thrashing-machines, straw or fodder cutters, or similar machines; and it has for its objects to provide such a carrier in which the frame of the carrier may be hinged at the same point at which the lower or inner shaft is journaled without strain upon the said shaft, in which the parts of the turn-table may be simply and strongly cast in as few pieces as possible, and in which the slack of the chains of the carrier may be conveniently and independently taken up, as will be more fully described, and particularly pointed out in the claims.

In the accompanying drawings, in which the same numerals of reference indicate the same or corresponding parts in all the figures, Figure 1 is a perspective view of my improved carrier. Fig. 2 is a longitudinal vertical sectional view. Fig. 3 is a transverse vertical sectional view on line *y y*, Fig. 2; and Figs. 4, 5, and 6 are detail views, on an enlarged scale, of the tightening device for the carrier-chains.

The turn-table for the carrier consists of two circular flanged boxes, 1 and 2, having the edges of their respective flanges 3 and 4 bearing against each other and forming a closed box in shape similar to a cheese-box. The flanges of both boxes and the bottom of the lower box are preferably perforated or formed in open casting, so as to admit of the interior of the box-shaped turn-table being cleaned, and the lower box is secured in any suitable manner under the discharge end of the machine with which it is connected. The lower box is formed with a central short shaft, 5, upon the upper end of which the upper box turns with a central bearing, 6, and the bottom of the box has two bearings, 7, cast integral with it in a line with each other, forming bearings for a radial shaft, 8, which is provided at its outer end with a gear-wheel, 9, to which the power driving the carrier is applied, and having at its inner end a beveled pinion, 10,

meshing with a bevel-crown, 11, upon the under side of a wheel, 12, having a downwardly-extending sleeve, 13, and journaled upon the central shaft of the box, and provided with an upwardly-facing bevel-crown, 14, the sleeve supporting the wheel at the proper height above the bottom of the box. The upper box is formed with downwardly-projecting lips upon the inner side of its flange, which help to keep the boxes turning against each other with the edges of the flanges bearing true against each other, and the under side of the top of this box is provided with two bearing-blocks, 16, in a line with each other, which blocks form bearings for a radial shaft, 17, having a bevel-pinion, 18, upon its inner end, meshing with the bevel-crown upon the upper face of the central wheel, and having a sprocket-wheel, 19, upon its outer end.

The upper side of the top of the upper box is provided with two diametrically-opposite pillow blocks or posts, 20, immediately at the periphery of the top, and the upper ends of these blocks or posts are formed with open bearings 21, having suitable removable pins, 23, for closing the upper open sides.

Two trunnions, 22, formed with axial bearings 24, and projecting laterally from two castings or brackets, 25, upon the inner or lower ends of the side pieces, 26, of the carrier 27, are journaled to rock in the bearings of the blocks or posts, being confined by the pins, and the carrier-frame may be raised or lowered, rocking with its trunnions in the bearings by means of two legs or props, 29, having perforations 30 in the upper portions, with which perforations they are pivoted upon two laterally-projecting studs, 31, upon the side pieces of the frame, the elevation or inclination of the frame being adjusted by adjusting the studs in perforations higher up or lower down in the legs, and by changing the angles of the legs. A shaft, 32, is journaled in the bearings formed in the trunnions, and the outer end of this shaft is provided with a sprocket-wheel, 33, over which passes an endless sprocket-chain, 34, passing under the sprocket-wheel upon the radial shaft in the bearings under the top of the box. Endless carrier-chains 35 pass around sprocket-wheels 36 upon this shaft and over sprocket-wheels 37 upon a shaft, 38, at

the upper or outer end of the frame, and transverse slats 39 have their ends secured to these chains and travel up over the bottom 40 of the carrier-frame, carrying the hay, chaff, fodder, straw, or whatever the machine is to convey, with them.

The upper ends of the side pieces of the elevator-frame are provided with castings or brackets 41, which are secured to the outer sides of the side pieces and extend beyond the ends of the same, having longitudinal slots 42 in the said extended ends, and the outer sides of the castings are formed with flanges 43 at the sides or edges of the slots, projecting outward and extending at the upper edges of the slots the entire length of the castings, forming ways upon the faces of the same. The ends of the upper or outer sprocket-shaft, 38, are journaled in the outer ends of two blocks, 44, in bearings 45 in the same, and the under sides of the rear portions of these blocks are formed with cogged racks 46. The blocks slide in the slots, having flanges 47 bearing against the inner sides of the slotted castings, and the racks of the blocks mesh with the upper cogged portions, 48, of two wheels, 49, having outwardly-projecting nuts or heads 50 upon their faces, by means of which they may be revolved, and journaled with inwardly-projecting short shafts 51 in downwardly-projecting extensions 52 in the castings. The lower portions of the peripheries of these wheels are provided with ratchet-teeth 53, which are engaged by weighted pawls 54, pivoted upon the extensions.

It will be seen that by turning the wheels the chain belts of the carrier may be tightened or slackened, and the weighted pawls engaging the ratchet-teeth will hold the wheels in their adjusted positions; and having the cogs and the ratchet-teeth upon the same wheel, but upon different portions of their peripheries, simplifies their construction without interfering with their effectiveness.

The flanges of the upper and lower boxes of the turn-table may be provided with hooks or catches 55, engaging eyes or catches 56, so that the boxes may be secured at any desired point of revolution of the upper box and its elevator-frame and be held together without any danger of the bevel-gearing lifting the upper box and slipping cogs, which would be liable to happen if the upper box is not held securely down upon the lower box.

It will be seen that the carrier may be pointed in any desired direction from the machine to which it is attached, and may be set at any elevation desired; and by having the carrier-frame fulcrumed or pivoted upon the trunnions which form bearings for the lower or inner shaft of the carrier the frame may swing at its innermost end, and at the same time it will not strain upon the shaft, as it is liable to do when the frame is pivoted upon the ends of the shaft, as is commonly done in this class of elevators.

It will be seen that the turn-table consists

simply of two pieces, all the bearings and the pillow blocks or posts for the carrier-frame being cast in one with the boxes of the turn-table.

The provision of the open bearings in both pillow-blocks allows the carrier-shaft to be set within its bearings and removed at once, for convenience in packing and in transporting the machine. The turn-table box-sections can be separated and put together at once.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, in an endless carrier for fodder-cutters and the like, of a turn table consisting of two circular box-sections, the lower one having a vertical central shaft, 5, and the bearing-blocks 7 7, and the upper box-section having on the lower edge projecting lips 15, the bearing-blocks 16 16, and a central guide-bearing, 6, for the vertical shaft, with the double beveled cog-wheel adapted to turn freely upon said shaft, the drive-shaft 8, journaled in the bearings of the lower box-section, having a bevel-pinion, 10, upon its inner end, meshing with the lower crown, 11, of the central wheel, and having the drive-gear 9, a shaft, 17, journaled in the bearings of the upper box-section, having a bevel-pinion, 18, upon its inner end meshing with the upper crown, 14, of the central gear, and a carrier-frame journaled upon the upper box-section, and having an endless carrier connected by gearing to and driven from the upper box-shaft, as shown and described.

2. The combination, in an endless carrier for fodder-cutters and the like, of a turn-table composed of a lower and an upper box-section adapted to be adjusted upon each other, the upper box-section having two pillow-blocks, 20, each having an open bearing, 21, at its upper end, with a carrier-frame having castings 25, formed with hollow trunnions 22, adapted to be set within the open top bearing, 21, of both pillow-blocks and to form the bearings of the lower shaft of the carrier, and suitable driving-gear for said shaft, all as shown and described.

3. The combination, in an endless carrier for fodder-cutters and the like, of a turn-table composed of a lower and an upper box-section adapted to be adjusted upon each other, each box-section containing an independent horizontally-arranged drive-shaft and each shaft having a gear-wheel on each end, with a central double bevel-gear loosely mounted in the lower box-section, and the endless carrier operated by the shaft of the upper box-section, substantially as herein set forth.

4. An endless carrier for fodder-cutters and the like, composed of three separable parts—that is to say, an endless carrier-frame part having hollow trunnions 22 22, a top circular turn-table section having pillow-blocks 20, each having open bearings 21 at its upper end adapted to receive the hollow trunnions, and a bottom turn-table section, each table-

section having an independent drive-shaft gearing with a central double bevel-gear mounted in the lower box-section, the shaft of the upper box-section and the shaft of the carrier being connected at their outer ends by sprocket-gear and chain, substantially as described.

5. In a carrier, the combination of a casting upon the upper end of the side piece of the frame extending beyond the end, and having a longitudinal slot formed with a flange at the edges of the slot upon the outer side and extending to the inner end of the casting at the upper edge of the slot, a block sliding in the way formed by the flanges, and having a bearing for the outer carrier-shaft in its outer end sliding in the slot, and having a cogged rack upon the under side of the rear end, a wheel having means for turning it, and formed at the upper

portion of the periphery with cogs meshing with the rack and at the lower portion with ratchet-teeth, and a weighted pawl engaging the ratchet-teeth, as shown, and for the purpose set forth.

6. The combination, in a carrier, of the upper shaft having sprocket-wheels and the carrier-chains, with sliding bearings for said shaft having racks, the segmental pinions engaging said racks, and having also ratchet-teeth, and the weighted pawls engaging the teeth of said segmental pinions, as shown and described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAMSON R. HARRISON.

Witnesses:

JOHN C. WELTY,

JOHN H. SPONSELLER.